

6HB6

BEAM PENTODE

FOR TV VERTICAL-DEFLECTION AMPLIFIER APPLICATIONS

DESCRIPTION AND RATING

The 6HB6 is a beam pentode designed for use as a vertical-deflection amplifier in television receivers. It is also useful in video amplifier applications.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC*	6.3±0.6	Volts
Heater Current‡	0.76	Amperes
Direct Interelectrode Capacitances§		
Grid-Number 1 to Plate: (g1 to p)	0.18	pf
Input: g1 to (h + k + g2 + b.p.)	13	pf
Output: p to (h + k + g2 + b.p.)	8.0	pf

MECHANICAL

Operating Position - Any
Envelope - T-6 1/2, Glass
Base - E9-1, Small Button 9-Pin
Outline Drawing - EIA 6-4

Maximum Diameter	0.875	Inches
Maximum Over-all Length	3.063	Inches
Maximum Seated Height	2.813	Inches

MAXIMUM RATINGS

VERTICAL-DEFLECTION AMPLIFIER SERVICE¶—DESIGN-MAXIMUM VALUES

DC Plate Voltage	350	Volts
Peak Positive Pulse Plate Voltage	2500	Volts
Screen Voltage	300	Volts
Negative DC Grid-Number 1 Voltage	100	Volts
Plate Dissipation	10	Watts
Screen Dissipation	2.0	Watts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode		
DC Component	100	Volts
Total DC and Peak	200	Volts
Heater Negative with Respect to Cathode		
Total DC and Peak	200	Volts
Grid-Number 1 Circuit Resistance		
With Fixed Bias	1.0	Megohms
With Cathode Bias	2.2	Megohms

PHYSICAL DIMENSIONS

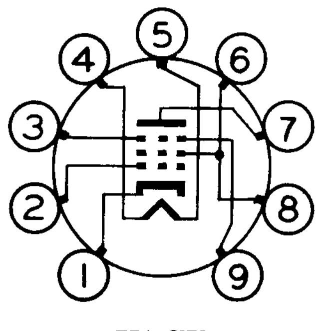
0.875" MAX.
3.063" MAX.
2.531 MAX.
2.813" MAX.
T6½

EIA 6-4

TERMINAL CONNECTIONS

Pin 1 - Cathode
Pin 2 - Grid Number 1
Pin 3 - Beam Plates
Pin 4 - Heater
Pin 5 - Heater
Pin 6 - Grid Number 2 (Screen)
Pin 7 - Plate
Pin 8 - Grid Number 2 (Screen)
Pin 9 - Beam Plates

BASING DIAGRAM



EIA 9NW



MAXIMUM RATINGS (Cont'd)

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Plate Voltage	60	250	250	Volts
Screen Voltage	250	125	250	Volts
Grid-Number 1 Voltage	0#	---	---	Volts
Cathode-Bias Resistor	---	33	100	Ohms
Plate Resistance, approximate	---	28000	24000	Ohms
Transconductance	---	24000	20000	Micromhos
Amplification Factor: (g1 to g2)	---	---	33	
Plate Current	150	40	40	Milliamperes
Screen Current	37	4.2	6.2	Milliamperes
Grid-Number 1 Voltage, approximate Ib = 100 Microamperes	---	-6.4	-13	Volts

NOTES

* The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

‡ Heater current of a bogey tube at Ef = 6.3 volts.

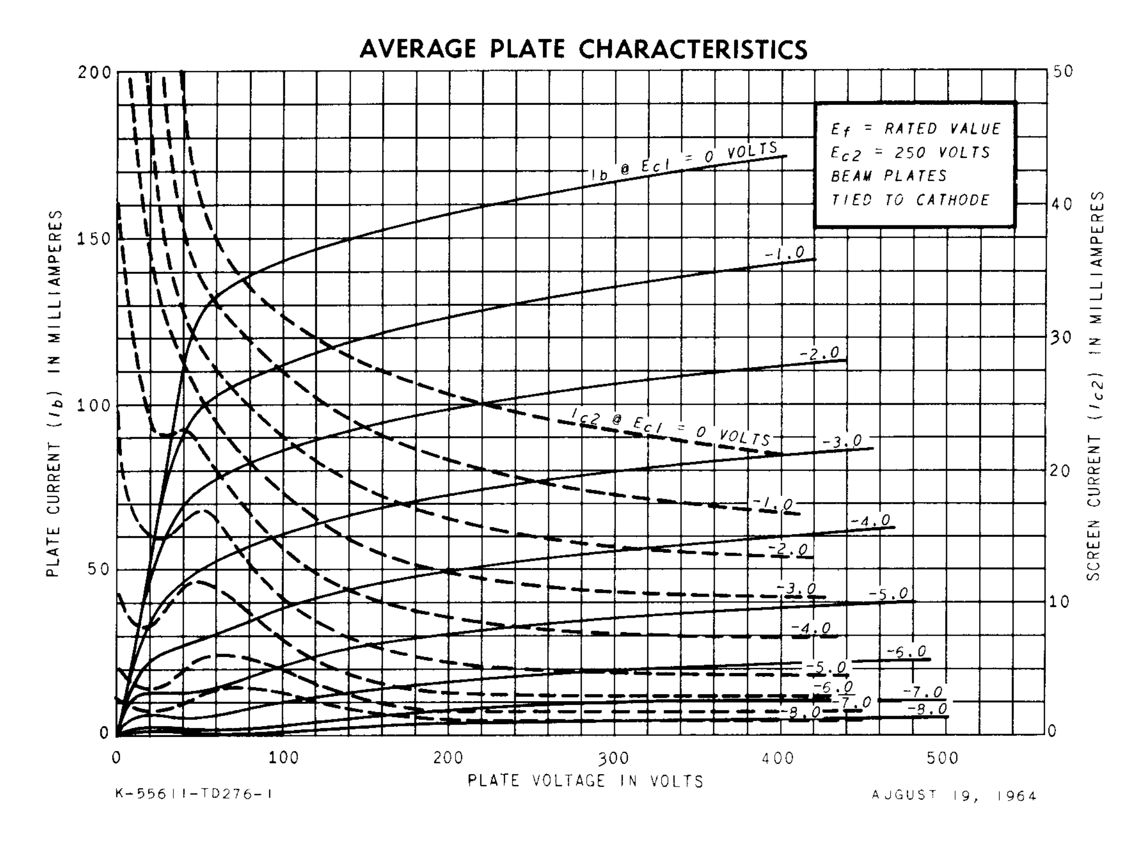
§ Without external shield.

¶ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.

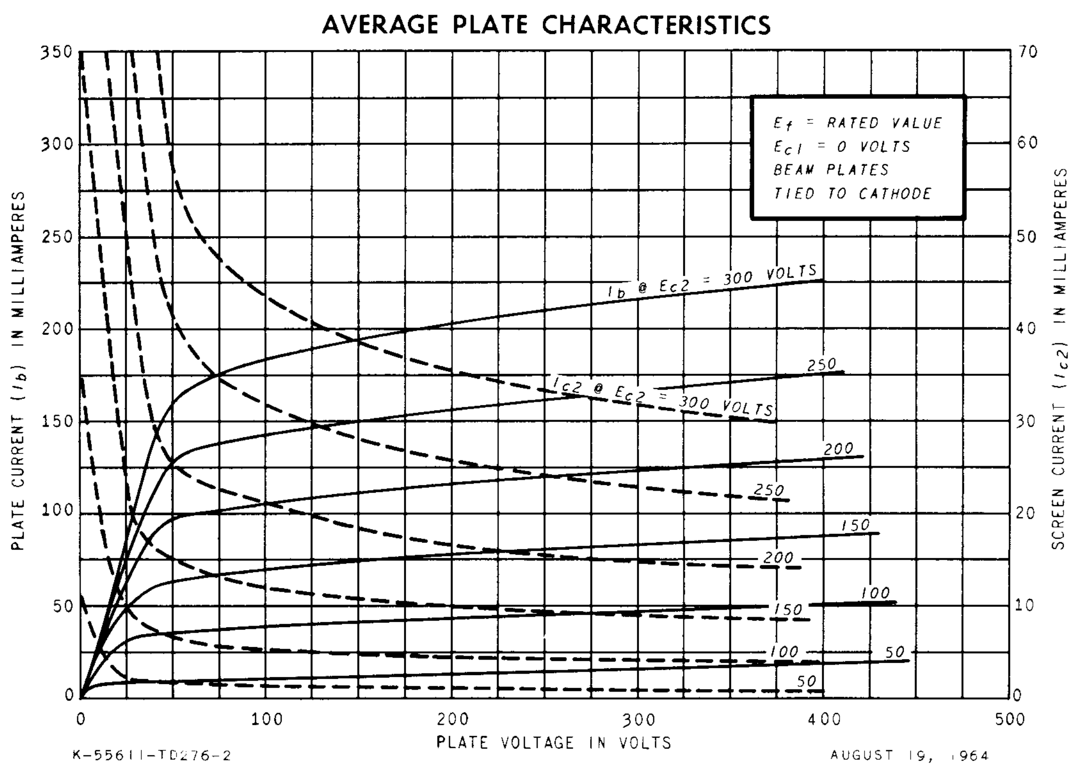
Applied for short interval (two seconds maximum) so as not to damage tube.

The tubes and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of tubes by General Electric Company conveys any license under patent claims covering combinations of tubes with other devices or elements. In the absence of an express written agreement to the contrary, General Electric Company assumes no liability for patent infringement arising out of any use of the tubes with other devices or elements by any purchaser of tubes or others.

AVERAGE PLATE CHARACTERISTICS

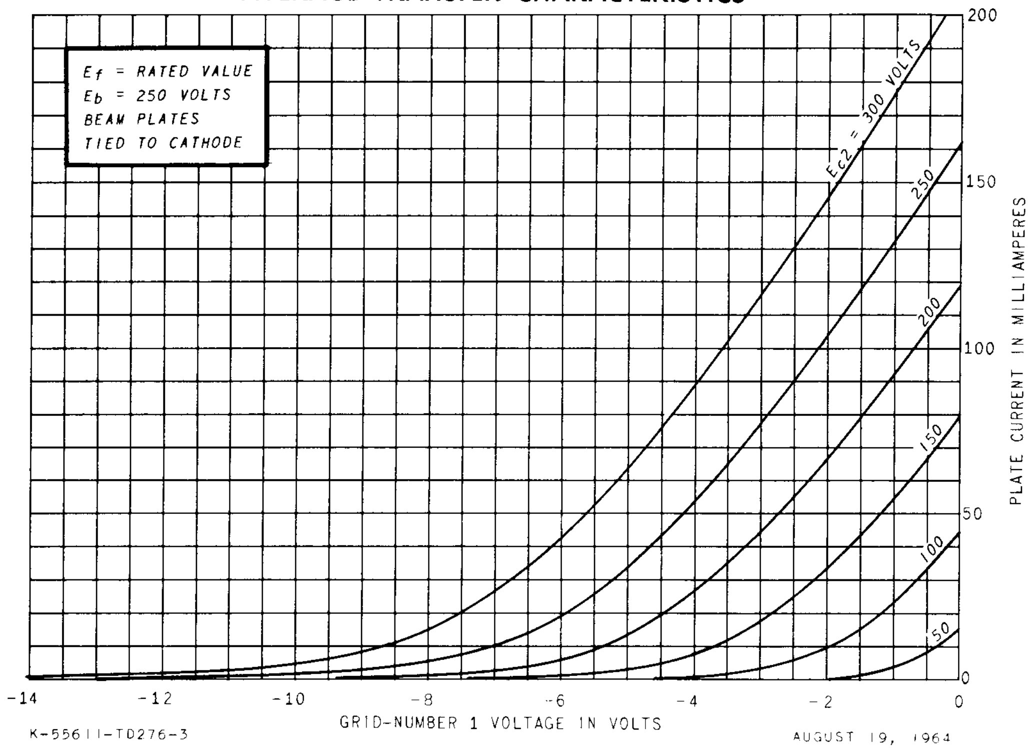


AVERAGE PLATE CHARACTERISTICS



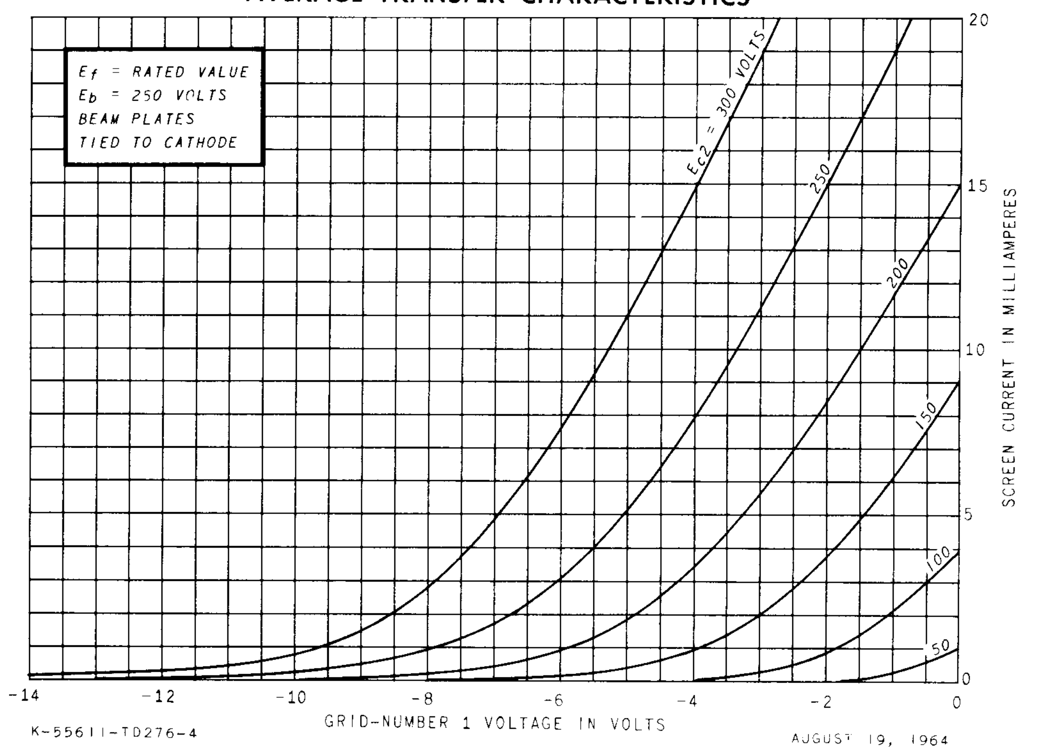


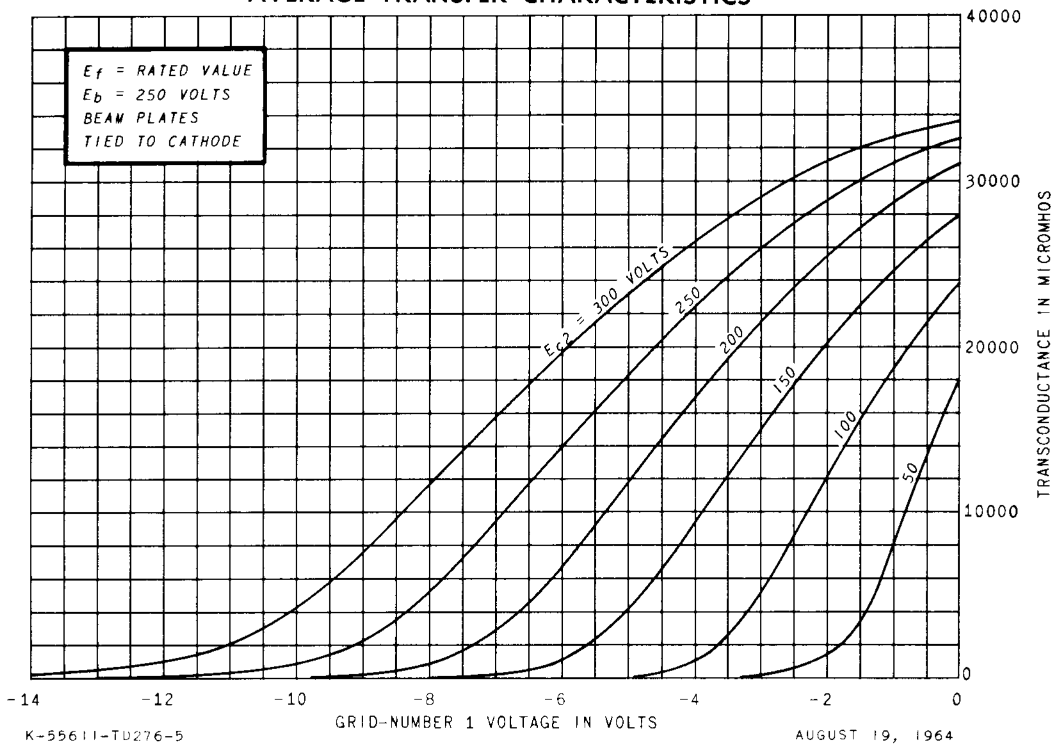
AVERAGE TRANSFER CHARACTERISTICS





AVERAGE TRANSFER CHARACTERISTICS




AVERAGE TRANSFER CHARACTERISTICS
Ef = RATED VALUE
Eb = 250 VOLTS
BEAM PLATES
TIED TO CATHODE
Ec2 = 300 VOLTS
250
200
150
100
50
40000
30000
20000
10000
0
TRANSCONDUCTANCE IN MICROMHOS
-14
-12
-10
-8
-6
-4
-2
0
GRID-NUMBER 1 VOLTAGE IN VOLTS
K-55611-TD276-5
AUGUST 19, 1964